

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(19)



(54) IMPROVEMENTS IN OR RELATING TO SEATS

(71) We, **UNIVERSAL OIL PRODUCTS COMPANY**, a Corporation organised and existing under the laws of the State of Delaware, United States of America, of Ten UOP Plaza-Algonquin and Mt. Prospect Roads, Des Plaines, Illinois 60016, United States of America, formerly of 30 Algonquin Road, Des Plaines, Illinois 60016, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to seats, and more particularly to an adjustable armrest in a vehicle seat.

According to the present invention, there is provided a vehicle seat having a pivotal armrest comprising a support member for an armrest pad assembly pivotal about a substantially horizontal axis, first and second co-operating clutch members coaxial with the said pivotal axis, one of the clutch members being pivotal with the support member and the other clutch member being secured against rotation, a set of ratchet teeth on both axial faces of each clutch member and so directed that in each clutch member the sets of ratchet teeth are symmetrical about a plane extending perpendicularly to the axis of the clutch member, the ratchet teeth on the adjacent axial faces of the two clutch members co-operating so that pivotal movement of the said one clutch member relative to the other clutch member in a sense to raise the support assembly is permitted and pivotal movement of the said one clutch member in the reverse sense is prevented, the clutch members being movable axially apart against a resilient bias whereby to permit disengagement of the co-operating ratchet teeth.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a side elevation of an ad-

justable armrest in a vehicle seat in accordance with the invention;

Figure 2 is a section taken on line II—II of Figure 1;

Figure 3 is a side elevation of a clutch disc of the armrest; and

Figure 4 is an end elevation, to an enlarged scale, of a segment of the clutch disc shown in Figure 3.

As shown in the drawings, the armrest comprises a U-section channel member 2 rotatably mounted for movement in a generally vertical plane about one end portion of a horizontally extending shaft 4. The other end portion of the shaft 4 is provided with flats and is secured against rotation in a correspondingly shaped aperture in a plate (not shown), the plate being fixed, for example by welding, to an upwardly extending member of the back frame of the seat (not shown).

The shaft 4 is journaled in the side walls of the channel member 2 at the rear end portion thereof, the side walls being cut away towards the front of the channel member 2. The channel member 2 supports an armrest pad assembly 6 in the form of, for example, a resilient foam plastics material with a plastics covering.

A first annular clutch disc 8 extends around the shaft 4, and is secured, for example by welding, to the inner surface of the inner sidewall of the channel member 2, a second annular clutch disc 10 is mounted on the shaft 4 adjacent the first disc 8 and is secured against rotation relative to the shaft 4 by a pin 11 extending through the shaft 4 and the disc 10. The adjacent axial surfaces of the first and second clutch discs 8 and 10 are formed with radially extending ratchet teeth 12 (Figures 3 and 4). A compression spring 14, disposed about the shaft 4, is interposed between the outer side wall of the channel member and the second clutch disc 10 and acts to bias the first clutch disc 8 towards the second clutch disc 10 so that their adjacent ratchet teeth 12 engage.

The ratchet teeth 12 are so inclined that rotation of the first clutch disc 8, and hence

of the channel member 2, relative to the second clutch disc 10 in a sense to raise the channel member 2 is permitted, whilst rotation in the opposite sense, i.e. in a sense to lower the channel member 2, is prevented.

The clutch discs 8 and 10 are identical and are preferably formed by moulding; advantageously, the discs are formed from sintered steel or other metal. Ratchet teeth 12 are provided on each axial face of the clutch discs 8 and 10, in each disc the ratchet teeth 12 on the two axial faces being symmetrical about a plane extending perpendicularly to its axis of rotation. Thus, the clutch discs for the right and left-hand armrests are interchangeable and can be produced using the same mould.

In use, to raise the armrest, the channel member 2 is pivoted about the shaft 4 into the selected position, the ratchet teeth 12 on the first clutch disc 8 riding over the co-operating ratchet teeth 12 on the second clutch disc 10. When in the selected position, the armrest is locked by the inter-engaging ratchet teeth 12 against downwards movement. To lower the armrest, the channel member 2 is moved inwardly along the shaft 4 against the bias of the compression spring 14 so that the first clutch disc 8 is moved axially away from the second clutch disc 10; in this manner the co-operating ratchet teeth 12 are disengaged to enable the armrest to be pivoted downwardly into the selected position. When the selected position is reached, pressure on the channel member 2 is released and the first clutch disc 8 is moved into engagement with the second clutch disc 10 by the bias exerted by the compression spring 14, the armrest then being locked by the inter-engaging ratchet teeth against further downward movement.

WHAT WE CLAIM IS:—

1. A vehicle seat having a pivotal armrest comprising a support member for an armrest pad assembly pivotal about a sub-

stantially horizontal axis, first and second co-operating clutch members co-axial with the said pivotal axis, one of the clutch members being pivotal with the support member and the other clutch member being secured against rotation, a set of ratchet teeth on both axial faces of each clutch member and so directed that in each clutch member the sets of ratchet teeth are symmetrical about a plane extending perpendicularly to the axis of the clutch member, the ratchet teeth on the adjacent axial faces of the two clutch members co-operating so that pivotal movement of the said one clutch member relative to the other clutch member in a sense to raise the support assembly is permitted and pivotal movement of the said one clutch member in the reverse sense is prevented, the clutch members being movable axially apart against a resilient bias whereby to permit disengagement of the co-operating ratchet teeth.

2. A seat as claimed in claim 1 where the two clutch members are substantially identical and are formed by moulding.

3. A seat as claimed in claim 2 wherein the clutch members are formed from sintered metal.

4. A seat as claimed in any one of the preceding claims wherein the support member is mounted for pivotal and axial movement on a horizontally extending shaft, the said one clutch member is secured to the support member, the said other clutch member is secured to the shaft, and the resilient bias is provided by spring means interposed between the support member and the said other clutch member.

5. A vehicle seat substantially as hereinbefore described with reference to the accompanying drawings.

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COMPLETE SPECIFICATION

1 SHEET

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the Original on a reduced scale

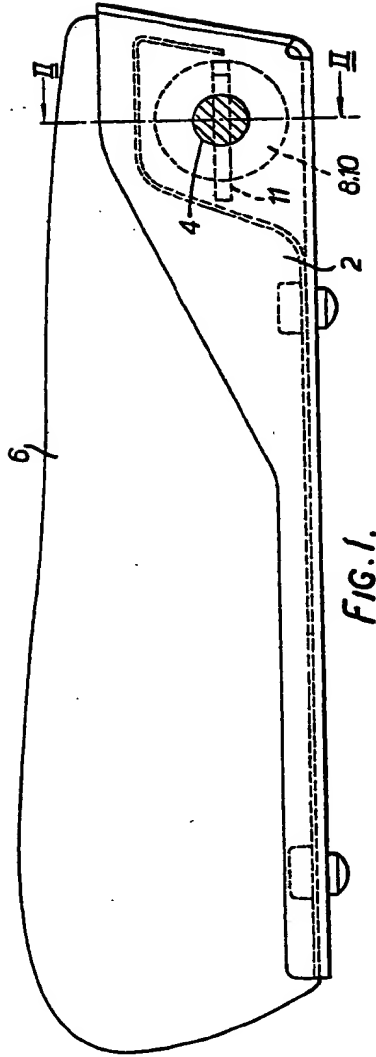


FIG. 1.

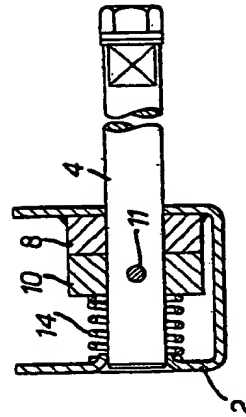


FIG. 2.

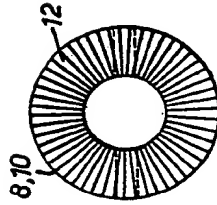


FIG. 3.

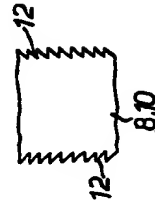


FIG. 4.

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